

ABSTRACT OF THE DISCLOSURE

A multiple access wireless communications architecture provides selective, simultaneous communications with wireless devices located in different sections of a spatial area around a communications apparatus referred to as "sectors". This includes communications between wireless devices in a single sector, between wireless devices in different sectors and between wireless devices and a wired network or wireless backhaul network. The wireless communications architecture generally includes two or more wireless antenna arrangements that are each configured to provide communications with wireless devices located in a particular sector. Each wireless antenna arrangement is further configured to determine whether signals are being communicated on a communications channel before transmitting on the communications channel. This may be implemented, for example, using a carrier sense or energy detection mechanism. Wireless devices within a sector may communicate on the same or different communications channels, depending upon the particular multiple access protocol employed. For example, TDMA or CSMA may be used to allow wireless devices in a sector to share communications channels. Communications channels may also be used simultaneously in different sectors by different wireless devices.